SPEC® CFP2006 Result

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Acer Incorporated

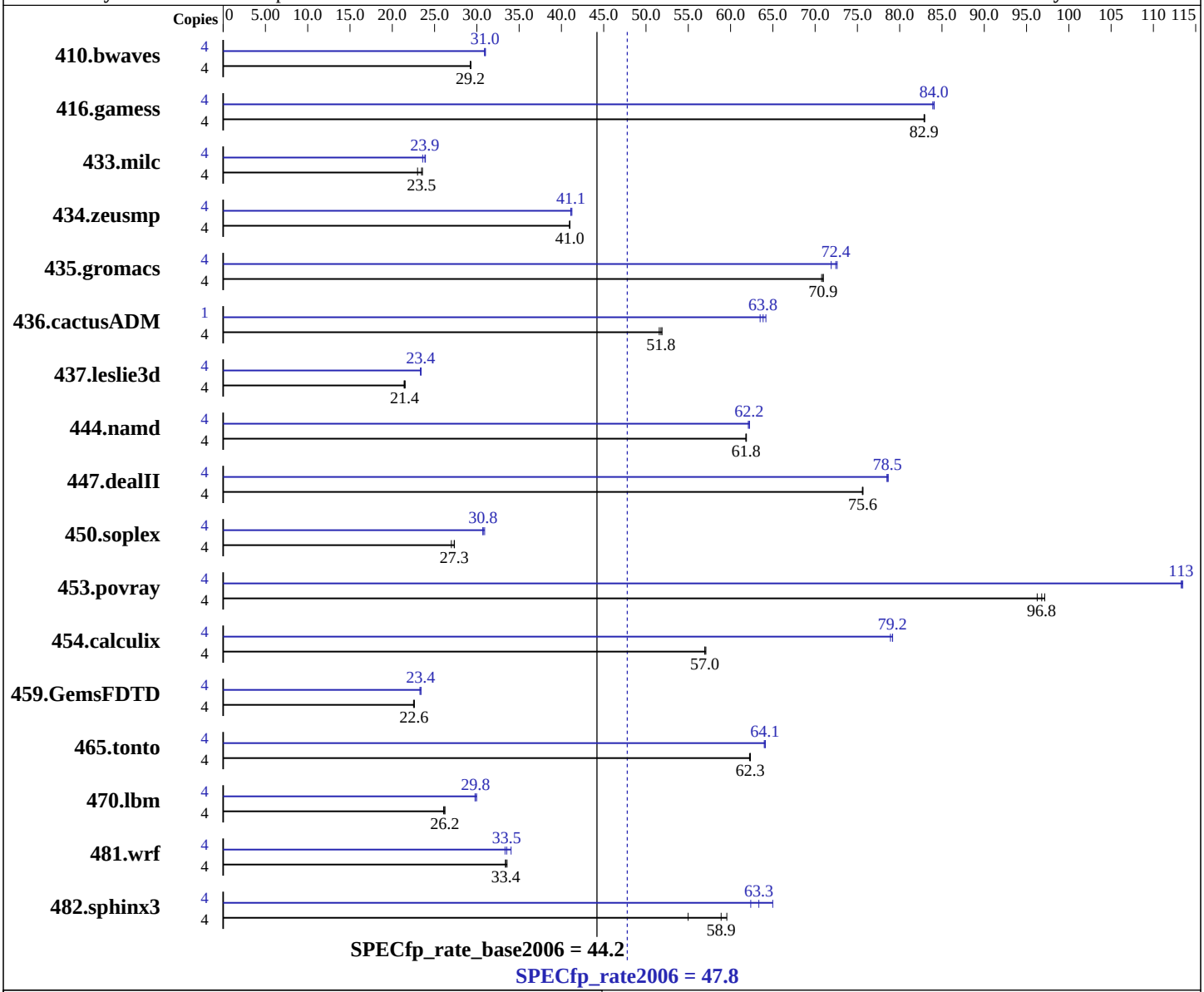
Acer Altos R920 (Intel Xeon E7220)

SPECfp®_rate2006 = 47.8

SPECfp_rate_base2006 = 44.2

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Mar-2008
Hardware Availability: Nov-2007
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E7220
CPU Characteristics:	1066MHz system bus
CPU MHz:	2930
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1, 2, 4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per core

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Software

Operating System:	SuSE Linux Enterprise Server 10 SP1 (x86_64) Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-user, level 3
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (16 x 1048MB ECC FB-DIMM DDR2-667 CL5-5-5)
Disk Subsystem: 1 x 73GB 10K RPM SAS HDD
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1861	29.2	1855	29.3	**1860**	**29.2**	4	1759	30.9	1752	31.0	**1755**	**31.0**
416.gamess	4	945	82.9	944	83.0	**945**	**82.9**	4	**932**	**84.0**	933	83.9	931	84.1
433.milc	4	1597	23.0	1558	23.6	**1565**	**23.5**	4	1556	23.6	**1539**	**23.9**	1535	23.9
434.zeusmp	4	889	40.9	888	41.0	**888**	**41.0**	4	886	41.1	**885**	**41.1**	883	41.2
435.gromacs	4	404	70.8	**403**	**70.9**	402	71.0	4	397	71.9	**394**	**72.4**	393	72.6
436.cactusADM	4	927	51.6	**923**	**51.8**	921	51.9	1	186	64.2	**187**	**63.8**	188	63.5
437.leslie3d	4	**1753**	**21.4**	1747	21.5	1757	21.4	4	1607	23.4	1612	23.3	**1609**	**23.4**
444.namd	4	518	61.9	519	61.8	**519**	**61.8**	4	517	62.1	515	62.2	**516**	**62.2**
447.dealII	4	**605**	**75.6**	605	75.6	605	75.7	4	**583**	**78.5**	582	78.6	583	78.5
450.soplex	4	1236	27.0	1220	27.4	**1221**	**27.3**	4	**1085**	**30.8**	1086	30.7	1079	30.9
453.povray	4	221	96.3	**220**	**96.8**	219	97.2	4	188	113	**188**	**113**	188	113
454.calculix	4	**579**	**57.0**	579	57.0	578	57.1	4	418	78.9	**417**	**79.2**	417	79.2
459.GemsFDTD	4	1885	22.5	**1880**	**22.6**	1877	22.6	4	1824	23.3	**1816**	**23.4**	1815	23.4
465.tonto	4	**631**	**62.3**	631	62.3	632	62.2	4	614	64.1	615	64.0	**614**	**64.1**
470.lbm	4	2109	26.1	**2098**	**26.2**	2096	26.2	4	1845	29.8	**1842**	**29.8**	1833	30.0
481.wrf	4	**1337**	**33.4**	1331	33.6	1339	33.4	4	1340	33.3	**1332**	**33.5**	1312	34.0
482.sphinx3	4	1418	55.0	1309	59.6	**1324**	**58.9**	4	**1231**	**63.3**	1200	65.0	1250	62.4

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
BIOS Settings
  Hardware Prefetcher set to OFF

  Adjacent Cache Line Prefetch set to OFF

All results but peak 436.cactusADM used taskset to bind
processes to cores.
"ulimit -s unlimited" was set for stacksize unlimited
OMP_NUM_THREADS set to number of cores
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

Fortran benchmarks (except as noted below):
`ifort`

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/include`

Benchmarks using both Fortran and C:
`icc ifort`

Peak Portability Flags

410.bwaves: `-DSPEC_CPU_LP64`
416.gamess: `-DSPEC_CPU_LP64`
433.milc: `-DSPEC_CPU_LP64`
434.zeusmp: `-DSPEC_CPU_LP64`
435.gromacs: `-DSPEC_CPU_LP64 -nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

433.milc: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -fno-alias -auto-ilp32`

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

Continued on next page

Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.html

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.xml`

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